



Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Joseph C. Marron  
APPLN. NO: 10/601,802 CONFIRMATION NO.: unknown  
FILED: 23 June 2003 ART UNIT: unknown  
TITLE: MULTI-STAGE DATA PROCESSING FOR FREQUENCY-  
SCANNING INTERFEROMETER

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Here are copies of references that may be relevant to the examination of this application. These references are listed on attached Forms PTO-SB/08A and 08B.

Priority is claimed to Provisional Application Nos. 60/391,004 filed 24 June 2002 entitled "System For Processing Multi-Wavelength Interferometer Data".

Other commonly assigned applications relating to the same general field of technology are as follows:

- US Patent Application No. 10/446,012 entitled "Tunable Laser System Having An Adjustable External Cavity",
- US Patent Application No. 10/465,181 entitled "Common-path Frequency-scanning Interferometer",
- US Patent Application No. 10/610,235 entitled "Frequency-scanning Interferometer With Non-specular Reference Surface", and
- US Patent Application No. 10/610,236 entitled "Interferometer System of Compact Configuration".

The Examiner's attention is also directed to the Background portion of the application for a discussion of the state of the art in which the invention was made.

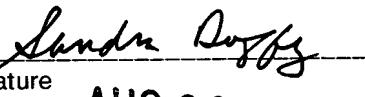
For any questions on this art or the application, the Examiner is invited to call applicant's representative at the number listed below.

Respectfully submitted,

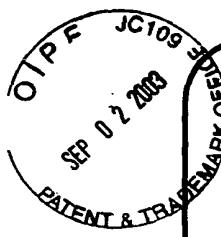


Thomas B. Ryan Reg. No. 31,659  
Eugene Stephens & Associates  
56 Windsor Street  
Rochester, New York 14605  
Phone: (585) 232-7700  
Dated: AUG 29 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450, on: 29 Aug. 2003

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AUG 29 2003



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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

<i>Complete if Known</i>	
<b>Application Number</b>	10/601,802
<b>Filing Date</b>	23 June 2003
<b>First Named Inventor</b>	Joseph C. Marron
<b>Group Art Unit</b>	unknown
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	Marron 06/03-2

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

Examiner Signature		Date Considered	
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**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, indication of the year of the reign of the Emperor must precede the serial number of the document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under the WIPO Standard ST.16, if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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Sheet 2 of 4

## Complete if Known

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Filing Date	23 June 2003
First Named Inventor	Joseph C. Marron
Group Art Unit	unknown
Examiner Name	Unknown
Attorney Docket Number	Marron 06/03-2

## OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	T <sup>2</sup>
		"Multiple-wavelength Interferometry With Tunable Source", R.G. Pilston and G.N. Steinberg, Applied Optics, Vol. 8, No. 3, March 1969, pp. 552-556	
		"Two-wavelength Interferometry", D. Malarcara, editor, <i>Optical Shop Testing</i> , New York, Wiley, 1978, pp. 397-402	
		"Multiple-wavelength Phase-shifting Interferometry", Y. Cheng and J.C. Wyant, Applied Optics, Vol. 24, No. 6, 15 March 1985, pp. 804-806	
		"Distance measurement by the wavelength shift of laser diode light", H. Kikuta, K. Iwata, and R. Nagata, Applied Optics, Vol. 25, No. 17, 1 September 1986, pp. 2976-2980	
		"Interferometer for measuring displacement and distance", T. Kubota, M. Nara, and T. Yoshino, Optics Letters, Vol. 12, No. 5, May 1987, pp. 310-312	
		"Three-color laser-diode interferometer", P. de Groot, Applied Optics, Vol. 30, No. 25, 1 September 1991, pp. 3612-3616	
		"Wavelength-shift interferometry for distance measurements using the Fourier transform technique for fringe analysis", M. Suematsu and M. Takeda, Applied Optics, Vol. 30, No. 28, 1 October 1991, pp. 4046-4055	
X		"Three-dimensional lensless imaging using laser frequency diversity", J.C. Marron and K.S. Schroeder, Applied Optics, Vol. 31, No. 2, 10 January 1992, pp. 255-262	
		"Holographic laser radar", J.C. Marron and K.S. Schroeder, Optics Letters, Vol. 18, No. 5, 1 March 1993, pp. 385-387	
		"Use of a opacity constraint in three-dimensional imaging", R.G. Paxman, J.H. Seldin, J.R. Fienup, and J.C. Marron, in proceedings of the SPIE Conference on Inverse Optics III, Orlando, Florida, April 1994	
		"Applications of Tunable Lasers to Laser Radar and 3D Imaging", L.G. Shirley and G.R. Hallerman, Technical Report 1025, Lincoln Laboratory, MIT, Lexington, Massachusetts, 26 February 1996	

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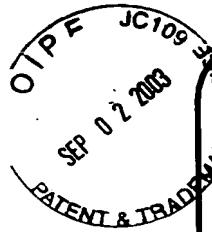
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		"Wavelength scanning profilometry for real-time surface shape measurement", S. Kuwamura and I. Yamaguchi, Applied Optics. Vol. 36, No. 19, 1 July 1997, pp. 4473-4482	
		"Three-dimensional imaging using a tunable laser source", J.C. Marron and K.W. Gleichman, Optical Engineering 39(1) 47-51, January 2000, pp. 47-51	
		"Spectrally narrow pulsed dye laser without beam expander", M.G. Littman and H.J. Metcalf, Applied Optics. Vol. 17, No. 14, 15 July 1978, pp. 2224-2227	
		"A simple extended-cavity diode laser", A.S. Arnold, J.S. Wilson, and M.G. Boshier, Review of Scientific Instruments, Vol. 69, No. 3, March 1998, pp. 1236-1239	
		"External-cavity diode laser using a grazing-incidence diffraction grating", K.C. Harvey and C.J. Myatt, Optics Letters, Vol. 16, No. 12, 15 June 1991, pp. 910-912	
		"Novel geometry for single-mode scanning of tunable lasers", K Liu and M.G. Littman, Optics Letters, Vol. 6, No. 3, March 1981, pp. 117-118	
		"External-cavity frequency-stabilization of visible and infrared semiconductor lasers for high resolution spectroscopy", M.G. Boshier, D. Berkeland, E.A. Hinds, and V. Sandoghar, Optics Communications 85, 15 September 1991, pp. 355-359	
		"Widely Tunable External Cavity Diode Lasers", T. Day, M. Brownell, and I-Fan Wu, New Focus, Inc., 1275 Reamwood Avenue, Sunnydale, California	
		"Littrow configuration tunable external cavity diode laser with fixed direction output beam", C.J. Hawthorn, K.P. Weber and R.E. Scholten, Review of Scientific Instruments, Vol. 72, No. 12, December 2001, pp. 4477-4479	
		"Fizeau Interferometer", D. Malarcara, editor, Optical Shop Testing, New York, Wiley, 1978, pp. 19-24	
		"Burch's Interferometer Employing Two Matched Scatter Plates", D. Malarcara, editor, Optical Shop Testing, New York, Wiley, 1978, pp. 82-84	

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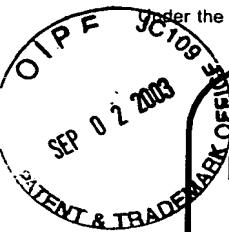
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		"Holographic contouring by using tunable lasers", N. George and W. Li, Optics Letters, Vol. 19, No. 22, 15 November 1994, pp. 1879-1881	
		"Use of a multimode short-external-cavity laser diode for absolute-distance interferometry", P. de Groot, Applied Optics, Vol. 32, No. 22, 1 August 1993, pp. 4193-4198	
		"Three-dimensional sensing of rough surfaces by coherence radar", T. Dresel, G. Hausler, and H. Venzke, Applied Optics, Vol. 31, No. 7, 1 March 1992, pp. 919-925	
		Littrow-Laser web site sacher.de/littrow.htm, 07 April 2002	
		"Tunable Diode Lasers – Stand up to Research and Commercial Applications", B. Shine, Laser Product Line Manager, New Focus, Inc., originally published in Photonics Spectra, January 1992, pp. 102	
		"Scatter Fringes of Equal Thickness", J.M. Burch, Nature, Vol. 17, May 16, 1953, pp. 889-890.	
		"Scatter-Fringe Interferometry", J.M. Burch, J. Opt. Soc. Am. 52, 1962, pp. 600.	
		"Some Further Aspects of Scatter-Fringe Interferometry", A.H. Shoemaker and M.V.R.K. Murty, Applied Optics, Vol. 5, No. 4, April 1966, pp. 603-607.	
		"Laser Speckle and Related Phenomena", J.C. Dainty, editor, Springer-Verlag, Berlin, 1984.	
		"Digital Picture Processing", A. Rosenfeld, and A.C. Kak, Vol. 1, Academic Press, New York, 1982.	

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